

IN THE CLAIMS:

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. When strikethrough cannot easily be perceived, or when five or fewer characters are deleted, [[double brackets]] are used to show the deletion. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1 and 11, and CANCEL claim 10 without prejudice or disclaimer in accordance with the following:

1. (Currently amended) A gene detecting chip to detect and analyze at least one of genes, single base substitution SNP or point mutation of genes, the gene detecting chip comprising:

a body having a depression;
an upper cover to be fixed to said body from above said depression;
an enclosed internal space part, formed by said depression in said body as a result of said upper cover being fixed to said body, capable of being filled with and being emptied of gene samples;
a plurality of measuring electrodes formed at the bottom of said space part; and
a common electrode which is a counter electrode to said measuring electrodes arranged in the space part; and
a measuring apparatus capable of detecting and analyzing genes,

wherein,

when a voltage is applied between said common electrode and said measuring electrodes to detect a gene, electric current between said common electrode and said measuring electrodes can be detected, and

when the chip is configured to be inserted into and removed from the measuring apparatus, and is configured to be electrically connected to said measuring apparatus to detect at least one of genes, single base substitution SNP or point mutation of genes by detecting electric currents between said counter electrode and each of said plurality of measuring electrodes, wherein the at least one of the genes, single base substitution SNP or point mutation of genes is obtained by placing gene samples, nucleic acid sequence samples or gene-amplified nucleic acid sequence samples in the space part to form double strands with a plurality of PCR products or oligonucleotides, placing an electrolyte including an electrochemically active

molecule in the space part; controlling the temperature at which said double strands are formed,
removing the chip from the measuring apparatus, washing, and injecting electrolytic solution
including electrochemically active molecules into the space part before detecting electric
currents.

2. (Previously presented) The gene detecting chip according to claim 1, wherein two opposing surfaces of each of said body and said upper cover each have an injection hole extending to the depression of the body.

3. (Previously presented) The gene detecting chip according to claim 1, wherein said upper cover is transparent.

4. (Previously presented) The gene detecting chip according to claim 1, wherein said measuring electrodes form an electrode array.

5. (Previously presented) The gene detecting chip according to claim 1, wherein said common electrode is arranged so as not to contact the measuring electrodes.

6. (Previously presented) The gene detecting chip according to claim 1, wherein PCR products or oligonucleotides consisting of different genetic sequences are immobilized on each of said measuring electrodes.

7. (Previously presented) The gene detecting chip according to claim 1, wherein each of said plurality of measuring electrodes is combined with each of a plurality of wirings; and

wherein said wirings are respectively connected to said measuring electrodes on a one to one basis, or form a matrix structure as a grid wiring consisting of a plurality of conductors fixed in rows and lines to connect each of said measuring electrodes arranged in the array with their respective nearest conductor of the conductors fixed in rows and lines.

8. (Previously presented) The detecting chip according to claim 1 or claim 2, wherein said detecting chip is configured to be inserted into and removed from a measuring

apparatus capable of detecting an electric current, and is configured to be electrically connected to said measuring apparatus.

9. (Previously presented) A gene detecting chip according to any one of claims 1 to 3, wherein said detecting chip forms part of a card or a cassette.

10. (Cancelled)

11. (Currently amended) The gene detecting apparatus according to claim 101, wherein the temperature of said detecting chip is changed by using peltier devices to control temperature conditions for hybridization.

12. (Withdrawn) A method for detecting single nucleotide polymorphisms and point mutations of DNA samples, said method comprising:

filling said DNA samples of gene-amplified DNA from said DNA samples into the space part of a gene detecting chip according to claim 1;

filling an electrolyte including electrochemically active molecules into said space part, and controlling the temperature to bind the electrochemically active molecules with said double strand; and

detecting single nucleotide polymorphisms and point mutations of said DNA samples or gene-amplified DNA from said DNA samples by detecting a flowing current value through the application of the voltage between said common electrode and said measuring electrodes of the gene detecting chip.

13-36 (Cancelled)